

FORM 51-102F3

MATERIAL CHANGE REPORT

1. Name and Address of Company

Turquoise Hill Resources Ltd. (**Turquoise Hill** or the **Company**)
Suite 354 – 200 Granville Street
Vancouver, British Columbia, V6C 1S4
Canada

2. Date of Material Change

July 15, 2019.

3. News Release

On July 15, 2019, the Company issued a press release disclosing the matters described herein, which was disseminated through the facilities of the Marketwired newswire service. A copy of the press release was filed on SEDAR.

4. Summary of Material Change

On July 15, 2019, the Company announced that improved rock mass information and geotechnical data modelling has confirmed that there are stability risks associated with components of the existing mine design for the completion of the underground development of the Oyu Tolgoi mine and that a number of mine design options are under consideration to address these risks. The previously announced definitive estimate review is now expected to be delivered in the second half of 2020, reflecting the preferred mine design approach, and preliminary estimates indicate that sustainable first production could be delayed by 16 to 30 months compared to the original feasibility study guidance in 2016. In addition, the development capital spend for the project may increase by \$1.2 to \$1.9 billion over the \$5.3 billion previously disclosed.

5.1 Full Description of Material Change

On July 15, 2019, the Company announced second quarter 2019 production results and provided an update on underground development.

Turquoise Hill, in conjunction with Rio Tinto, the manager of the Oyu Tolgoi mine, continues to review mine design options for the completion of the underground development of the Oyu Tolgoi mine and assess the impact on overall cost and schedule for the underground development. As previously disclosed in connection with Turquoise Hill's project development update on February 26, 2019, this review will result in a revised development plan reflecting appropriate risk reduction efforts.

Improved rock mass information and geotechnical data modelling has confirmed that there are stability risks associated with components of the existing mine design. Therefore, to address these risks, a number of mine design options are under consideration to complete the project. These options include assessment of the impact of the mid-access drives, location of the on-footprint components of the ore handling system, the sequence of crossing the panel boundaries during mining operations, and an option that alters the panel boundary approach and would leave temporary pillars in ore that would then be recovered later in the mine life, sub-blocking the previously planned three panels into five panels.

A number of options are being evaluated to determine the final design of “Panel 0,” and this work is anticipated to continue into early 2020. Given the further technical work that is needed, the definitive estimate review is now expected to be delivered in the second half of 2020, reflecting the preferred mine design approach.

All options under consideration present a clear pathway to sustainable first production, albeit with different cost and schedule implications. To date, these have been defined to a level of accuracy associated with a Conceptual Study or Order of Magnitude Study; therefore, significantly more work is required to complete the final assessment.

Based on these options, preliminary estimates indicate that sustainable first production could be delayed by 16 to 30 months compared to the original feasibility study guidance in 2016. This range includes contingency of up to eight months reflecting the unexpected and challenging geotechnical issues, complexities in the construction of Shaft 2, and reflects the detailed work still required to reach a more precise estimate. The level of accuracy of these estimates is preliminary in nature and subject to a range of variables including the timing of commissioning of Shaft 2, which is currently on track for October 2019, in line with previous guidance. The confidence level of these estimates is at a level associated with a Conceptual or Order of Magnitude Study, and further work is required between now and the second half of 2020 to refine the mine design options and study them to a level of confidence and accuracy associated with Feasibility Study quality estimates.

The development capital spend for the project may increase by \$1.2 to \$1.9 billion over the \$5.3 billion previously disclosed. This results in sustainable first production now being expected between May 2022 and June 2023. These ranges incorporate a range of productivity assumptions, with optimization work at site and technical review guiding the final inputs into the definitive estimate review. Although further work is necessary to reach definitive conclusions, Turquoise Hill is assessing the carrying value of its investment in the Project and will announce any changes, along with any adjustments to deferred tax, in its Q2 results at the end of July 2019.

In addition to working closely with Rio Tinto, Turquoise Hill has engaged independent third-party consultants to provide the Company with insights into the planning and estimate process currently underway, as well as progress of key construction work at the mine site.

Current information indicates that Oyu Tolgoi mineral reserves will not be materially impacted by the Hugo North mine design options being considered; however, ongoing reviews will be considered as the work progresses.

The Company will continue to focus on minimizing the impact to the project schedule and cost as it works through the detailed analysis and testing of each mine design option, and work continues concurrently to finalize the critical underground infrastructure and shaft construction.

Turquoise Hill will evaluate the impact of the estimated delays to sustainable first production as well as increases in underground capital expenditure on its cash flows, liquidity and financing projections, and will update the market in conjunction with the progression of the definitive estimate review.

References to “\$” in this Report refer to United States dollars.

This Report is being filed by the Company out of an abundance of caution due to uncertainty as to whether the matters described herein constitute a “material change” as such term is defined in National Instrument 51-102 – *Continuous Disclosure Obligations* and/or other applicable Canadian provincial or territorial securities legislation (collectively, **Canadian Securities Laws**) and to ensure that, if so constituted, such matters have been disclosed in the manner required by Canadian Securities Laws. Accordingly, the filing of this Report in and of itself is not, and should

not to be construed as, an admission by the Company that such matters constitute a “material change” within the meaning of Canadian Securities Laws.

5.2 Disclosure for Restructuring Transactions

Not applicable.

6. Reliance on subsection 7.1(2) of National Instrument 51-102

Not applicable.

7. Omitted Information

Not applicable.

8. Executive Officer

Further information regarding the matters described in this Report may be obtained from Roy McDowall, Head of Investor Relations & Corporate Communications at (514) 848-1506. Mr. McDowall is an officer through whom an executive officer who is knowledgeable about the details of the matters described herein may be contacted.

9. Date of Report

July 24, 2019.

Disclosure of information of a scientific or technical nature in this Report in respect of the Oyu Tolgoi mine was approved by Jo-Anne Dudley, Chief Operating Officer of Turquoise Hill. Ms. Dudley is a “qualified person” as that term is defined in National Instrument 43-101 - *Standards of Disclosure for Mineral Projects*.

Forward-looking Statements

Certain statements made herein, including statements relating to matters that are not historical facts and statements of the Company’s beliefs, intentions and expectations about developments, results and events which will or may occur in the future, constitute “forward-looking information” within the meaning of applicable Canadian securities legislation and “forward-looking statements” within the meaning of the “safe harbor” provisions of the United States Private Securities Litigation Reform Act of 1995. Forward-looking statements and information relate to future events or future performance, reflect current expectations or beliefs regarding future events and are typically identified by words such as “anticipate”, “could”, “should”, “expect”, “seek”, “may”, “intend”, “likely”, “plan”, “estimate”, “will”, “believe” and similar expressions suggesting future outcomes or statements regarding an outlook. These include, but are not limited to, information regarding the timing and amount of production and potential production delays, statements in respect of the impacts of any delays on the Company’s cash flows, expected copper and gold grades, liquidity, funding requirements and planning, and statements regarding timing and status of underground development, the development options under consideration for the design of Panel 0 and the related cost and schedule implications, timing and status of the Tavan Tolgoi-based power project, capital and operating cost estimates, timing of completion of the definitive estimate review, mill throughput, anticipated business activities, planned expenditures, corporate strategies, and other statements that are not historical facts.

Forward-looking statements and information are made based upon certain assumptions and other important factors that, if untrue, could cause the actual results, performance or achievements of the Company to be materially different from future results, performance or achievements expressed or implied by such statements or information. There can be no assurance that such statements or

information will prove to be accurate. Such statements and information are based on numerous assumptions regarding present and future business strategies, local and global economic conditions, and the environment in which the Company will operate in the future, including the price of copper, gold and silver and projected gold, copper and silver grades, anticipated capital and operating costs, anticipated future production and cash flows, the anticipated location of certain infrastructure and sequence of mining in Panel O and the status of the Company's relationship and interaction with the Government of Mongolia on the continued operation and development of Oyu Tolgoi and Oyu Tolgoi LLC internal governance.

Certain important factors that could cause actual results, performance or achievements to differ materially from those in the forward-looking statements and information include, among others: copper, gold and silver price volatility; discrepancies between actual and estimated production, mineral reserves and resources and metallurgical recoveries; development plans for processing resources; the outcome of the definitive estimate review; matters relating to proposed exploration or expansion; mining operational and development risks, including geotechnical risks and ground conditions; litigation risks; regulatory restrictions (including environmental regulatory restrictions and liability); Oyu Tolgoi LLC's ability to deliver a domestic power source for the Oyu Tolgoi project within the required contractual time frame; communications with local stakeholders and community relations; activities, actions or assessments, including tax assessments, by governmental authorities; events or circumstances (including strikes, blockages or similar events outside of the Company's control) that may affect the Company's ability to deliver its products in a timely manner; currency fluctuations; the speculative nature of mineral exploration; the global economic climate; dilution; share price volatility; competition; loss of key employees; cyber security incidents; additional funding requirements, including in respect of the development or construction of a long-term domestic power supply for the Oyu Tolgoi project; capital and operating costs, including with respect to the development of additional deposits and processing facilities; and defective title to mineral claims or property. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements and information, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. All such forward-looking statements and information are based on certain assumptions and analyses made by the Company's management in light of their experience and perception of historical trends, current conditions and expected future developments, as well as other factors management believes are appropriate in the circumstances. These statements, however, are subject to a variety of risks and uncertainties and other factors that could cause actual events or results to differ materially from those projected in the forward-looking statements or information.

Readers are cautioned not to place undue reliance on forward-looking information or statements. By their nature, forward-looking statements involve numerous assumptions, inherent risks and uncertainties, both general and specific, which contribute to the possibility that the predicted outcomes will not occur. Events or circumstances could cause the Company's actual results to differ materially from those estimated or projected and expressed in, or implied by, these forward-looking statements. Important factors that could cause actual results to differ from these forward-looking statements are included in the "Risk Factors" section in the Company's Annual Information Form dated as of March 13, 2019 in respect of the year ended December 31, 2018 (the "AIF") as supplemented by the Company's Management's Discussion and Analysis of Financial Condition and Results of Operations for the three months ended March 31, 2019 ("MD&A").

Readers are further cautioned that the list of factors enumerated in the "Risk Factors" section of the AIF and in the MD&A that may affect future results is not exhaustive. When relying on the Company's forward-looking statements and information to make decisions with respect to the Company, investors and others should carefully consider the foregoing factors and other uncertainties and potential events.